

Applicants: Nolan, et al.  
Application No.: Unassigned  
Filed: October 10, 2001  
Parent Application No.: 09/453,610  
Parent Filing Date: December 3, 1999

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### REMARKS

The present invention provides methods for ex vivo introduction of at least one chromosome into a eukaryotic cells other than plant cells by contacting at least one chromosome ex vivo substantially simultaneously with the application of an electric pulse to the cell under conditions sufficient to cause fusion of the chromosome and the cell. According to the invention methods the at least one chromosome is selected from a gene-bearing DNA/protein complex, a natural human chromosome, a mammalian chromosome, an artificial chromosome, and a yeast chromosome and has been encapsulated in a liposome or a micelle.

Claims 1-23 were pending before this response, with claims 1-20 and 23 being withdrawn in response to a restriction requirement. By the present communication, the title of the invention has been amended and the paragraph beginning at page 12, line 18 has been amended as shown

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In Exhibit A attached hereto. In addition, claim 22 is canceled without prejudice, claim 21 is amended and new claims 24-25 are added as shown in Exhibit A hereto to define Applicants' invention with greater particularity. No new matter is added by the amendments as the new claim language is fully supported by the Specification and original claims. Applicants submit that the claim amendments do not narrow the claims in any way within the meaning of Festo Corporation v. Shoketsu Kinzoku Kogyo Kabushiki Co. Ltd., a/k/a SMC Corporation and SMC Pneumatics, Inc. 234 F.3d 558, 51 U.S.P.Q. 2d 1959 (Fed. Cir. 2000). Accordingly, claims 21 and 24-25 are currently pending.

In view of the above amendments and remarks, reconsideration and favorable action on claims 21 and 24-25 are respectfully requested. In the event any matters remain to be resolved in view of this communication, the Examiner is encouraged to call the undersigned so that a prompt disposition of this application can be achieved.

Respectfully submitted,

Date: October 10, 2001

Lisa A. Haile, J.D., Ph.D.

Registration No. 38,347

Telephone: (858) 677-1456

Facsimile: (858) 677-1465

**USPTO CUSTOMER NO. 28213**

GRAY CARY WARE & FREIDENRICH LLP  
4365 Executive Drive, Suite 1600  
San Diego, California 92121-2189

Attachment: Exhibit A

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Exhibit A: Page 1

Attorney Docket No.: GENE1320-2

**EXHIBIT A****Version with Markings to Show Changes Made****In the Specification**

Please delete the present title of the invention and replace it with the following new title:  
**--FACS ASSISTED METHODS FOR INTRODUCING INDIVIDUAL CHROMOSOMES  
INTO CELLS--**

Please replace the paragraph beginning at page 12, line 18 of the Specification with the following substitute paragraph:

Still other methods for insertion of a single chromosome may be employed in the practice of invention methods. Thus, in another embodiment of the present invention, there are provided methods for the rapid introduction of single chromosomes into eukaryotic cells, comprising contacting an encapsulated single chromosome with a cell, substantially simultaneously with the application of an electric pulse, under conditions sufficient to cause fusion of the encapsulated chromosome with the cell. The chromosome is preferably encapsulated in a liposome or micelle prior to being contacted with the cell and the cell's being subjected to an electroporation-causing electric pulse.

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Exhibit A: Page 1

**In the claims**

Please amend claim 21 as follows:

21. (Amended) A method for the ex vivo introduction of at least one chromosome into a eukaryotic cell, wherein said cell is not a plant cell, said method comprising contacting [an encapsulated] at least one chromosome ex vivo substantially simultaneously with the application of an electric pulse to the cell under conditions sufficient to cause fusion of said [encapsulated] at least one chromosome and said cell, wherein the at least one chromosome is a gene-bearing DNA/protein complex, a natural human chromosome, a mammalian chromosome, an artificial chromosome, or a yeast chromosome, and wherein said at least one chromosome is encapsulated in a liposome or a micelle.

Please add the following new claims:

24. (New) The method of claim 21, wherein the method further comprises verifying that the cell has been transformed with the at least one chromosome.
25. (New) The method of claim 23, wherein the verifying involves fluorescence activated cell sorting of the cells to obtain those that contain the at least one chromosome.